

**REMARKS**

Applicants have amended claims 1-3, 7-9, 11-13, 15-17, 19-21, and 33-39 to differently recite the invention. Claims 4, 6, 10, 14, 18, 36, 49, and 56 remain canceled. Accordingly, claims 1-3, 5, 7-9, 11-13, 15-17, 19-35, 37-48, 50-55, and 57-59 are currently pending for consideration. Of these, claims 23-32, 40, and 41 are withdrawn.

In the pending Office Action, claims 1, 3, 5, 7, 9, 11-13, 15, 17, 19, 21-22, 33, 35, 37, 39, and 42-45 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hoekstra (U.S. Patent No. 6,420,678, hereinafter "Hoekstra") in view of Umehara et al. (U.S. Patent No. 5,882,956, hereinafter "Umehara"); claims 2, 8, 16, 20, 34, and 38 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hoekstra in view of Umehara and further in view of Piwczyk (U.S. Patent No. 6,376,797, hereinafter "Piwczyk"); claims 46, 48, 50, 52, 53, 55, 57, and 59 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hoekstra in view of Umehara and further in view of Negoro (U.S. Patent No. 5,411,921, hereinafter "Negoro"); and claims 47, 51, 54, and 58 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hoekstra in view of Umehara and further in view of Piwczyk and further in view of Negoro. Applicants respectfully traverse these rejections, at least for the following reasons.

Applicants first of all thank Examiner Ullah and Supervisory Primary Examiner Thao Le for the courtesy of the interview with the undersigned and Mr. Yasunori Ishizaka (from Japanese firm representing Applicants) on November 29, 2010. An Interview Summary was issued by Examiner Ullah on December 6, 2010. Applicants additionally provide the following description of the Substance of the Interview.

At the interview, Applicants' representatives provided details on why the claims discussed during the interview patentably distinguished over the applied references, including the primary reference to Hoekstra. As an example, Applicants' representatives pointed out that the primary reference to Hoekstra did not disclose or render obvious simultaneous tearing apart of a semiconductor substrate and die-bonding resin layer. To the contrary, as described in Hoekstra at col. 6: 37-51, for example, and as shown in Fig. 5, a splitting device 20 is moved relative to substrate 4 so that (a) a scribe beam 42 heats the substrate 4, from the initial microcrack formed by the scribe initiation device 24, along the separation line 45, (b) a quenching stream 44 removes the heat from the substrate 4 along the separation line 45, thereby thermally shocking the substrate 4 in that region and propagating the microcrack along the separation line 45, and (c), the break beams 46 and 48 heat the regions on both sides of the microcrack to create tensile forces that are sufficient to separate the substrate 4 along the separation line 45 from the microcrack to the bottom surface. Accordingly, in Hoekstra, in cutting of any object to be processed, rapid heating and rapid cooling of a surface of the object are indispensable steps and, even if any cutting of the object were performed by such rapid heating/rapid cooling, Hoekstra still did not disclose or render obvious the tearing apart of a die-bonding resin layer by expansion of a sheet on to which the wafer is attached through the die-bonding resin. Moreover, it was argued during the interview that Hoekstra did not disclose or render obvious combinations such as recited in claims 4, 36, 50-55, and 57-59 discussed at the interview in which the sheet is expanded by pulling peripheral portions of the sheet outwardly, for essentially the same reason.

Applicants' representatives also argued during the interview that the remaining applied references did not make up for the deficiencies in Hoekstra. As an example, Applicants'

representatives argued that Umehara merely disclosed that a die-bonding resin layer may be cut by a blade. Nevertheless, Applicants' representatives pointed out that such cutting was already considered and specifically avoided by Applicants' specification, as can be understood from the final sentence of Applicants' Abstract, for example. Consequently, Applicants' representatives argues that it was clear that Umehara did not disclose nor render obvious tearing apart the die-bonding resin layer by expansion of a sheet on which the wafer is attached through the die-bonding resin layer, or expanding the sheet by pulling peripheral portions of the sheet outwardly, for that matter.

Moreover, Applicants' representatives argued during the interview that references such Hockstra, which focuses a laser, and Umehara, which utilizes a blade, were not properly combinable. Further, Applicants' representatives pointed out that even if the applied references were to be combined in the manner asserted in the Office Action, the resulting combination would not include the basic feature of Applicants' invention as recited in the claims at the time of the interview, namely, tearing apart the die-bonding resin layer along with the semiconductor substrate by expanding the sheet. Among other things, neither Hockstra nor Umehara pulls or expands any sheet. Instead, for example, Hockstra opts for the process of applying thermal stress. And, as argued at the interview, the remaining applied references do not overcome these deficiencies.

It appeared to Applicants' representatives during the interview that the Examiners agreed with the preceding positions. Moreover, this position appears to be reflected in the Interview Summary that issued on December 7, 2010.

After the interview, Applicants reviewed the claims and herein amend the claims to recite language that is related to but somewhat different than the “simultaneous tearing” language discussed at the interview. More particularly, rather than reciting “simultaneous tearing,” Applicants’ claims now are directed to combinations wherein the die-bonding resin layer simultaneously begins to be separated into pieces at the same time the semiconductor substrate is separated into pieces in response to expanding of the sheet. For essentially the same reasons as discussed at the interview and pointed out above, Applicants respectfully submit that such combinations patentably distinguish over the applied references of record, whether viewed alone or taken in combination.

In view of the foregoing, and in light of the discussions with the Examiners at the November 29 interview, as summarized above and in the Interview Summary Form of December 6, 2010, Applicants respectfully submit that the present claims all patentably distinguish over Hockstra and the other applied references of record for at least the aforementioned reasons. Accordingly, reconsideration and withdrawal of the rejections applied to the pending claims in the pending Office Action are respectfully requested.

For at least the foregoing reasons, Applicants respectfully request that the applied references of record do not disclose or render obvious the combinations recited in Applicants’ claims, whether such references are viewed alone or in combination. Accordingly, reconsideration and withdrawal of the pending rejections are respectfully requested, and a prompt and favorable action is earnestly solicited.

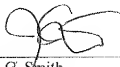
**CONCLUSION**

In view of the foregoing, Applicants submit that the pending claims are in condition for allowance, and respectfully request reconsideration and timely allowance of the pending claims. Should the Examiner feel that there are any issues outstanding after consideration of this response, the Examiner is invited to contact Applicants' undersigned representative to expedite prosecution. A favorable action is awaited.

**EXCEPT** for issue fees payable under 37 C.F.R. § 1.18, the Commissioner is hereby authorized by this paper to charge any additional fees during the entire pendency of this application including fees due under 37 C.F.R. § 1.16 and 1.17 which may be required, including any required extension of time fees, or credit any overpayment to Deposit Account No. 50-0573. This paragraph is intended to be a **CONSTRUCTIVE PETITION FOR EXTENSION OF TIME** in accordance with 37 C.F.R. § 1.136(a)(3).

Respectfully submitted,

**DRINKER, BIDDLE & REATH LLP**



John G. Smith  
Reg. No. 33,818

Date: April 18, 2011

**CUSTOMER NO. 55694**  
**DRINKER, BIDDLE & REATH LLP**  
1500 K Street, N.W., Suite 1100  
Washington, D.C. 20005-1209  
Tel: (202) 842-8800  
Fax: (202) 204-0289